



## King's Research Portal

DOI:

[10.1111/add.13972](https://doi.org/10.1111/add.13972)

*Document Version*

Peer reviewed version

[Link to publication record in King's Research Portal](#)

*Citation for published version (APA):*

Walsh, H. E. A., Hindocha, C., & Duaso, M. (2017). Commentary on Popova et al. (2017): Co-used and co-administered tobacco and cannabis (marijuana) require further investigation. *Addiction*, 112(10), 1830-1831. <https://doi.org/10.1111/add.13972>

### Citing this paper

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

### General rights

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

### Take down policy

If you believe that this document breaches copyright please contact [librarypure@kcl.ac.uk](mailto:librarypure@kcl.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.

**Commentary on** Popova et al (2017) Perceived harms and benefits of tobacco, marijuana, and electronic vaporisers among young adults in Colorado: Implications for health education and research.

Addiction. Online April 2017

Authors:

1. Hannah Walsh, Florence Nightingale Faculty of Nursing and Midwifery, King's College London, James Clerk Maxwell Building, 57 Waterloo Road, London SE1 8WA
2. Chandni Hindocha, Clinical Psychopharmacology Unit, Department of Clinical, Educational and Health Psychology, University College London, 1-19 Torrington Place, London WC1E 7HB
3. Dr Maria Duaso. Florence Nightingale Faculty of Nursing and Midwifery, King's College London, James Clerk Maxwell Building, 57 Waterloo Road, London SE1 8WA
4. maria.duaso@kcl.ac.uk

Word count: 674

No competing interests to declare

**Title: Commentary on Popova et al. (2017): Co-used and co-administered tobacco and cannabis (marijuana) require further investigation.**

**Citable summary: Tobacco and cannabis can be used concurrently (i.e. co-use of cigarettes and cannabis) or simultaneously (i.e. co-administered within the same product). We need to investigate the combined use of tobacco and cannabis in greater depth in order to develop effective interventions for young adults.**

Young adulthood represents a significant phase in the development of addiction, as the transition from occasional, experimental use of tobacco and cannabis into dependent, problematic use of both may occur during this period. Usage patterns of tobacco, nicotine and cannabis products are shifting constantly against the backdrop of evolving product ranges and increasing legalization of cannabis. The research community needs to keep pace in order to develop relevant and effective prevention and treatment interventions for this age group.

Popova et al. [1] provide a comprehensive and thought-provoking analysis of perceptions of tobacco, cannabis and electronic vaporizers. Their paper investigates the perceived relative harms of each and provides a framework of how young adults conceptualize these. However, it does not investigate the perceived combined impact of using tobacco and cannabis concurrently (i.e. co-use of cigarettes and cannabis) or simultaneously (i.e. co-administered within the same product).

The most common route of cannabis consumption across Europe, and in some parts of the world is with tobacco; that is, co-administered in a single product. In the United States it is smoked more commonly without tobacco, but co-use (i.e. use of both products but not simultaneously) is increasing across all age groups [2-4]. Popova et al. [1] do not detail the usage patterns of their interviewees, but evidence suggests that many US young adults do co-use [3].

Research investigating the bi-directional impacts of cannabis and tobacco is gaining traction. For example, both 'gateway' and 'reverse gateway' effects can lead to the development of dependency and/or problematic use [5-7]. Both substances, used simultaneously, can impact cognition [8] and

co-use leads to poorer psychosocial, cessation and health outcomes [9, 10]. Indeed the most significant and consistent positive association shown for co-use is exacerbation of mental health symptoms [11]. Nevertheless, the psychological and physical impact that each substance has on the other, and on the user, still requires further investigation. This seems crucial, given the high rates of young adult use among both European and world-wide co-users. In light of the current socio-political environment surrounding cannabis, the subsequent effect on tobacco use and cessation requires monitoring in longitudinal population surveys.

The qualitative evidence presented by Popova et al. [1] suggests that young adults may use one product to quit another. While evidence on the impact of co-use is provided by a number of survey studies [3, 4, 12, 13], we still know very little about users' perspectives on interchanging products, whether or not this occurs consciously, and what are the perceived outcomes for users.

To prevent young adults developing problematic use of either substance, we need to investigate what significant factors relate to co-use, and what motivates co-use and quit attempts. The natural history of co-use, cessation and the potential for the substitution effect of cannabis and tobacco [14] also requires exploration particularly from their perspective of the user [3, 4, 12]. Additionally, we need to know which quit methods are practised and appear feasible and effective, whether dual quit attempts are simultaneous or sequential and what role other products such as e-cigarettes (and cannabis vaporizers [15]) might play. To develop effective interventions, we also need to test whether existing theoretical frameworks such as the Behaviour Change Wheel [16] are relevant for characterizing co-use and assisting dual quit attempts.

The close relationship between tobacco and cannabis operates across multiple domains, including cultural and psychosocial, in addition to biochemical and clinical interactions. The complexity of this unique relationship is enhanced by the frequently shared route of administration, and we propose that this relationship requires investigation. Tobacco and cannabis must be considered hand in hand, as the impact and harms of both may be greater than the sum of their parts.

## References

1. Popova L., McDonald E. A., Sidhu S., Barry R., Richers Maruyama T. A., Sheon N. M. et al. Perceived harms and benefits of tobacco, marijuana, and electronic vaporizers among young adults in Colorado: implications for health education and research. *Addiction* 2017; 112: 1821–1829.
2. Hindocha C. et al. No smoke without tobacco: a global overview of cannabis and tobacco routes of administration and their association with intention to quit. *Front Psychiatry* 2016; 7: 104.
3. Schauer G. L., Schauer G. L., Berg C. J., Kegler M. C., Donovan D. M., Windle M. Assessing the overlap between tobacco and marijuana: trends in patterns of co-use of tobacco and marijuana in adults from 2003–2012. *Addict Behav* 2015; 49: 26–32.
4. Schauer G. L., King B. A., McAfee T. A. Prevalence, correlates, and trends in tobacco use and cessation among current, former, and never adult marijuana users with a history of tobacco use, 2005–2014. *Addict Behav* 2017; 73: 165–171.
5. Taylor M., Taylor M., Collin S. M., Munafò M. R., MacLeod J., Hickman M. et al. Patterns of cannabis use during adolescence and their association with harmful substance use behaviour: findings from a UK birth cohort. *J Epidemiol Community Health* 2017; 71: 764–770.

6. Badiani A., Boden J. M., De Pirro S., Fergusson D. M., Horwood L. J., Harold G. T. Tobacco smoking and cannabis use in a longitudinal birth cohort: evidence of reciprocal causal relationships. *Drug Alcohol Depend* 2015; 150: 69–76.
7. Patton G. C., Coffey C., Carlin J. B., Sawyer S. M., Lynskey M. Reverse gateways? Frequent cannabis use as a predictor of tobacco initiation and nicotine dependence. *Addiction* 2005; 100: 1518–1525.
8. Hindocha C., Freeman T. P., Xia J. X., Shaban N. D. C., Curran H. V. Acute memory and psychotomimetic effects of cannabis and tobacco both ‘joint’ and individually: a placebo-controlled trial. *Psychol Med* 2017; <https://doi.org/10.1017/S0033291717001222>.
9. Peters E. N., Budney A. J., Carroll K. M. Clinical correlates of co-occurring cannabis and tobacco use: a systematic review. *Addiction* 2012; 107: 1404–1417.
10. Tsai J., Rolle I. V., Singh T., Boulet S. L., McAfee T. A., Grant A. M. Patterns of marijuana and tobacco use associated with suboptimal self-rated health among US adult ever users of marijuana. *Prev Med Rep* 2017; 6: 251–257.
11. Ramo D. E., Liu H., Prochaska J. J. Tobacco and marijuana use among adolescents and young adults: a systematic review of their co-use. *Clin Psychol Rev* 2012; 32: 105–121.
12. Ramo D. E., Prochaska J. J. Prevalence and co-use of marijuana among young adult cigarette smokers: an anonymous online national survey. *Addict Sci Clin Pract* 2012; 7.
13. Hindocha C., Shaban N. D., Freeman T. P., Das R. K., Gale G., Schafer G. Associations between cigarette smoking and cannabis dependence: a longitudinal study of young cannabis users in the United Kingdom. *Drug Alcohol Depend* 2015; 148: 165–171.
14. Allsop D. J., Dunlop A. J., Saddler C., Rivas G. R., McGregor I. S., Copeland J. Changes in cigarette and alcohol use during cannabis abstinence. *Drug Alcohol Depend* 2014; 138: 54–60.
15. Hindocha C., Freeman T. P., Winstock A. R., Lynskey M. T. Vaping cannabis (marijuana) has the potential to reduce tobacco smoking in cannabis users. *Addiction* 2016; 111: 375.
16. Michie S., van Stralen M. M., West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implement Sci* 2011; 6: 42.